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L1 ANSWER 1 OF 1 WPIDS COPYRIGHT 1999 DERWENT INFORMATION LTD
ACCESSION NUMBER: 99-136042 [12] WPIDS

DOC. NO. CPI: C99-040117

TITLE: Washing bag for washing machine - has water absorbant sheets and water flow sheets with inlet and outlet at peripheral portion where sheets are not united.

DERWENT CLASS: F07

PATENT ASSIGNEE(S): (KAOS) KAO CORP

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
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APPLICATION DETAILS:

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PRIORITY APPLN. INFO: JP 97-172860 970613

INT. PATENT CLASSIF.:

MAIN: D06F035-00

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AB JP11004992 A UPAB: 990324

NOVELTY - The washing bag has a water absorbant sheet (2), carrier (3) and water flow sheets (12,22) that are configured at water absorbant sheet and the three are united at peripheral portion of another water absorbant sheet (2) that covers washing ingredients (10). Inlets and outlets are provided at remaining periphery between respective sheets and water flow sheets that are wound as roll integrally.

USE - For supporting cloths in washing machine.

ADVANTAGE - Sufficient cleaning effect is maintained and washing is easier without shrinkage of wearing. The generation of fuzz is prevented by fabric pill and support.

DESCRIPTION OF DRAWING(S) - The figure shows the front view of washing bag of a washing machine. (2) Absorbant sheet; (3) Carrier; (10) Washing ingredients; (12,22) Water flow sheets.

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AUXILIARY IMPLEMENT FOR LAUNDERING

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[Attached amendments have been incorporated into text of translation.]

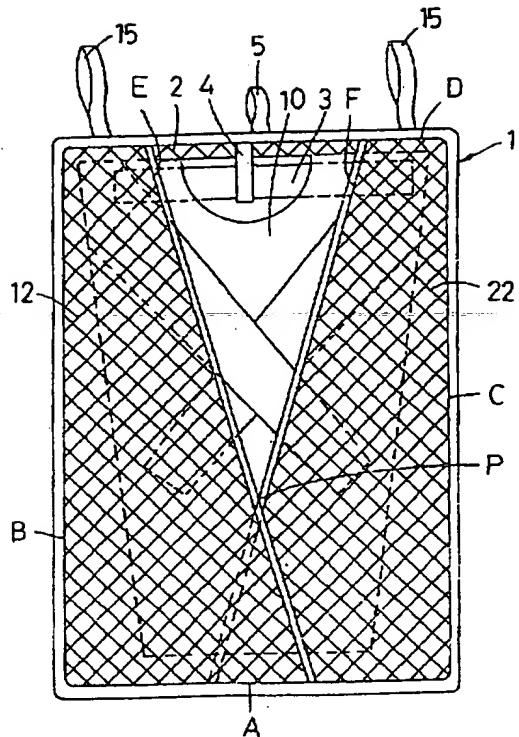
Abstract

Problem to be solved

To provide an inexpensive auxiliary implement for laundering capable of preventing the laundry from becoming misshapen in which the setting operation of the laundry is easy.

Means to solve the problem

One section of laundry (10) on one surface of sheet-shaped first water permeable member (2) is covered with sheet-shaped second and third water permeable members (12) and (22) of smaller area than the first water permeable member. One peripheral part of said second and third water permeable members (12) and (22) with one peripheral part of first water permeable member (2) are composed as one body together. The spaces between first water permeable member (2) and the remaining peripheral part of second water permeable member (12) and between first water permeable member (2) and the remaining peripheral part of third water permeable member (22) are composed as an insertion/extraction opening for laundry (10). Second and third water permeable members (12) and (22) are partially mutually superimposed. Laundry (10) and water permeable members (2), (12), and (22), having been wound into a roll shape as one body, folded as one body, or wound into a roll shape along with being folded as one body, can be prevented from being spread out.



Claims

1. An auxiliary implement for laundering characterized by the fact that it is provided with a first sheet-shaped water permeable member, a second sheet-shaped water permeable member of smaller area than said first water permeable member, and a third sheet-shaped water permeable member of smaller area than said first water permeable member, said second water permeable member and third water permeable member are arranged on one surface of said first water permeable member so that one section of the laundry on one surface of said first water permeable member can be covered with the second water permeable member and the third water permeable member, one peripheral part of said second water permeable member and one peripheral part of the third water permeable member are composed as one body with one peripheral part of said first water permeable member, said second water permeable member and third water permeable member are partially mutually superimposed, the spaces between one surface of the first water permeable member and the remaining peripheral part of said second water permeable member, between one surface of the first water permeable member and the remaining peripheral part of said third water permeable member, and between the remaining peripheral part of the second water permeable member and the remaining peripheral part of the third water permeable member are respectively composed into an insertion/extraction opening for laundry, each water permeable

member is flexible so that said laundry and the water permeable members can be wound into a roll shape as one body or be folded as one body or be wound into a roll shape along with being folded as one body, and a means is provided for preventing the laundry and water permeable members, which were wound into a roll shape or folded, or wound into a roll shape along with being folded, from being spread out.

2. Auxiliary implement for laundering described in Claim 1 in which the periphery of said first water permeable member has a first edge part positioned at the bottom, a second edge part positioned at the left, a third edge part positioned at the right, and a fourth edge part positioned at the top, the periphery of said second water permeable member has an edge part composed into one body with the first edge part of the first water permeable member, an edge part composed into one body with the second edge part which is adjacent to said first edge part, and a fifth edge part which traverses one surface of the first water permeable member so as to compose said insertion/extraction opening, the periphery of said third water permeable member has an edge part composed as one body with said first edge part, an edge part composed as one body with the third edge part which opposes said second edge part, and a sixth edge part which traverses one surface of the first water permeable member so as to compose said insertion/extraction opening, said fifth edge part and sixth edge part are composed to be longer than the edge parts of the first water permeable member, the edge part of the third water permeable member and the edge part of the second water permeable member composed as one body with said first edge part are arranged to mutually superimpose at least the center of said first edge part, the [overlap] width in the direction along the first edge part in said superimposed section of said second water permeable member and said third water permeable member is composed to become smaller towards the fourth edge part which opposes said first edge part and to become zero at the point the fifth edge part and the sixth edge part mutually intersect, and the space between the fifth edge part and the sixth edge part in the direction along said first edge part is composed to become larger towards the fourth edge part from the intersecting point of said fifth edge part and sixth edge part.

3. Auxiliary implement for laundering described in Claim 2 in which said fifth edge part and sixth edge part are connected at one end to the first edge part and at the other end to the fourth edge part.

4. Auxiliary implement for laundering described in any of Claims 1-3 in which a hanger for hanging said laundry is attached to the first water permeable member.

5. Auxiliary implement for laundering described in any of Claims 2-4 in which each water permeable member is composed to be expandable and the dimension of the third water permeable member and second water permeable member in the direction along said second edge part is composed to be shorter than the dimension of the first water permeable member.

6. Auxiliary implement for laundering described in any of Claims 1-5 in which at least the first water permeable member is composed by coupling the flexible front surface net and the flexible back surface net and arranged to provide a space between said nets, which are elastically relatively displaceable.

7. Auxiliary implement for laundering described in Claim 6 in which the coupling means for the front surface net and the back surface net is composed of plural linear parts capable of bending and deforming elastically, both nets are composed to be elastically relatively displaceable by one end of each linear part being coupled to the front surface net and the other end being coupled to the back surface net, and a space is formed between the linear parts.

8. Auxiliary implement for laundering described in any of Claims 1-5 in which at least the first water permeable member is composed of a net having flexibility and plural linear parts capable of bending and deforming elastically and coupled to one surface of said net, a space is formed between the linear parts, and the linear part side is composed as said one surface so as to be able to contact the laundry.

9. Auxiliary implement for laundering described in Claim 8 in which said linear parts are composed into a ring shape by both ends being coupled to said net.

Detailed explanation of the invention

[0001]

Technical field of the invention

The present invention relates to an auxiliary implement for laundering which is used when washing laundry with a washing machine.

[0002]

Prior art and problems to be solved by the invention

Conventionally, a bag-shaped laundering net was used to prevent laundry from becoming misshapen when washing with a washing machine. The conventional laundering net prevented the laundry from slipping out of the net during washing by providing a fastener which closes the insertion/extraction opening for the laundry. However, this type of fastener increased costs.

[0003]

Therefore, preventing laundry from slipping out of the net without using a fastener by making the insertion/extraction opening of said bag-shaped net small can be considered. However, if said insertion/extraction opening is made small, placing the laundry into said net becomes difficult.

[0004]

Therefore, inserting the laundry between a sheet-shaped net and a cord or band-shaped net attached to said net and winding the laundry and said net and cord, etc. into a roll shape as one body and washing the laundry in this state of having been wound into a roll shape can be considered.

[0005]

However, there is a problem of the laundry becoming misshapen during the washing if the laundry is simply inserted between a sheet-shaped net and cord or band-shaped net, etc. and wound into a roll shape. This is due to the fact that one portion of the laundry slips out from between said sheet-shaped net and the cord or band-shaped net, etc.

[0006]

The present invention aims to provide an auxiliary implement for laundering capable of solving said problem.

[0007]

Means to solve the problems

The auxiliary implement for laundering in the present invention is characterized by the fact that it is provided with a first sheet-shaped water permeable member, a second sheet-shaped water permeable member of smaller area than said first water permeable member, and a third sheet-shaped water permeable member of smaller area than said first water permeable member; said second water permeable member and third water permeable member are arranged on one surface of said first water permeable member so that one section of the laundry on one surface of

said first water permeable member can be covered with the second water permeable member and the third water permeable member, one peripheral part of said second water permeable member and one peripheral part of the third water permeable member are composed as one body with one peripheral part of said first water permeable member, said second water permeable member and third water permeable member are partially mutually superimposed, the spaces between one surface of the first water permeable member and the remaining peripheral part of said second water permeable member, between one surface of the first water permeable member and the remaining peripheral part of said third water permeable member, and between the remaining peripheral part of the second water permeable member and the remaining peripheral part of the third water permeable member are respectively composed into an insertion/extraction opening for the laundry, each water permeable member is flexible so that said laundry and the water permeable members can be wound into a roll shape as one body or be folded as one body or be wound into a roll shape along with being folded as one body, and a means is provided for preventing the laundry and water permeable members, which were wound into a roll shape or folded or wound into a roll shape along with being folded, from being spread out. According to the auxiliary implement for laundering in the present invention, placement of the laundry with respect to the water permeable members is executed by covering the laundry on one surface of the sheet-shaped first water permeable member with the sheet-shaped second water permeable member and third water permeable member. The laundry and the water permeable members are wound into a roll shape as one body, folded into one body, or wound into a roll shape along with being folded as one body, and then washed in a washing machine by spreading out of the laundry being prevented. According to the aforementioned constitution, the second water permeable member and the third water permeable member are partially mutually superimposed so that the one insertion/extraction opening and the other insertion/extraction opening for inserting the laundry between the first water permeable member and the second and third water permeable member are partially superimposed, and thus the laundry can be prevented from slipping out of the auxiliary implement for laundering during a wash more than when said superimposed state does not exist.

[0008]

In the auxiliary implement for laundering in the present invention, it is preferable for the periphery of said first water permeable member to have a first edge part positioned at the bottom, a second edge part positioned at the left, a third edge part positioned at the right, and a fourth edge part positioned at the top, the periphery of said second water permeable member to have an edge part composed into one body with the first edge part of the first water permeable member,

an edge part composed into one body with the second edge part which is adjacent to said first edge part, and a fifth edge part which traverses one surface of the first water permeable member so as to compose said insertion/extraction opening, the periphery of said third water permeable member to have an edge part composed as one body with said first edge part, an edge part composed as one body with the third edge part which opposes said second edge part, and a sixth edge part which traverses one surface of the first water permeable member so as to compose said insertion/extraction opening, said fifth edge part and sixth edge part to be composed to be longer than the edge parts of the first water permeable member, the edge part of the third water permeable member and the edge part of the second water permeable member composed as one body with said first edge part to be arranged to mutually superimpose at least the center of said first edge part, the [overlap] width in the direction along the first edge part in said superimposed section of said second water permeable member and third water permeable member to be composed to become smaller towards the fourth edge part which opposes said first edge part and to become zero at the point the fifth edge part and the sixth edge part mutually intersect, and the space between the fifth edge part and the sixth edge part in the direction along said first edge part to be composed to get larger towards the fourth edge part from the intersecting point of said fifth edge part and sixth edge part. According to this constitution, the laundry is prevented from slipping out from between the first water permeable member and the second and third water permeable members by the first water permeable member and the second water permeable at the second edge part side, by the first water permeable member and the third water permeable member at the third edge side, and by the first water permeable member, the second water permeable member, and the third water permeable member at at least the center of the first edge part, thus effectively preventing slip out. Furthermore, the fifth edge part and the sixth edge part composing the insertion/extraction opening are composed to be longer than the edge parts of the first water permeable members so the insertion/extraction opening for the laundry becomes large and insertion of the laundry becomes easy. The [overlap] width in the direction along the first edge part in the section where the second water permeable member and the third water permeable member are superimposed is composed to become smaller towards the fourth edge part, and moreover, to become zero at the point the fifth edge part and the sixth edge part intersect, and the space between the fifth edge part and the sixth edge part in the direction along the first edge part is composed to become larger towards the fourth edge part from the intersecting point of the fifth edge part and the sixth edge part. As a consequence, the laundry can be prevented from slipping out from the first edge side while on the other hand insertion/extraction of laundry from the fourth edge side can be made easy.

[0009]

It is preferable for said fifth edge part and sixth edge part to be connected at one end to the first edge part and the other end to be connected to the fourth edge part. Accordingly, the laundry can be prevented from slipping out by the first water permeable member and the second water permeable member at one end of the fourth edge part and by the first water permeable member and the third water permeable member at the other end of the fourth edge part.

[0010]

It is preferable for a hanger for hanging said laundry to be attached to the first water permeable member. By hanging the laundry on the hanger, the laundry can be reliably prevented from slipping out.

[0011]

It is preferable for each water permeable member to be expandable and for the dimension of the third water permeable member and second water permeable member in the direction along said second edge part to be shorter than the dimension of the first water permeable member. Accordingly, tensile force acts on the second water permeable member and the third water permeable member to wind up the laundry and the water permeable members into a roll shape as one body, or to fold it up as one body, or to wind it up into a roll shape along with folding it up as one body. The laundry can be held between the first water permeable member and the fifth and sixth edge parts (E) and (F) by said tensile force so the laundry can be reliably prevented from slipping out.

[0012]

In the present invention, it is preferable for at least the first water permeable member to be composed by coupling the flexible front surface net and the flexible back surface net and arranged to provide a space between it and said front surface net, which are elastically relatively displaceable. According to this constitution, relative movement of the back surface net with respect to the laundry can be alleviated even if centrifugal force during dewatering or water flow impact on the water permeable member covering the outer side of the folded laundry or the water permeable member covering the periphery of the rolled laundry by the front surface net elastically displacing relative to the back surface net. Accordingly, the periphery of the rolled

laundry or outer side of the folded laundry being abraded by the net and causing damage or generating pilling or feathering can be prevented. It is preferable for the coupling means between the front surface net and the back surface net to be composed of plural linear parts capable of bending and deforming elastically, for both nets to be composed to be elastically relatively displaceable by one end of each linear part being coupled to the front surface net and the other end being coupled to the back surface net, and for a space to be formed between the linear parts. Accordingly, water can pass through the space between the front surface net and the back surface net so the washing effect can be improved.

[0013]

Or in the present invention, it is preferable for at least the first water permeable member to be composed of a net having flexibility and plural linear parts which can bend and deform elastically and which are coupled to one surface of said net, for a space to be formed between the linear parts, and the linear part side to be composed as said one surface so as to be able to contact the laundry. According to this constitution, the relative movement of the linear parts with respect to the laundry can be alleviated by the net being elastically displaced relative to the linear parts even if centrifugal force during dewatering or water flow impact acts on the water permeable member covering the periphery of the rolled laundry or the water permeable member covering the outer side of the folded laundry. Accordingly, the periphery of the rolled laundry or the outer side of the folded laundry being abraded by the net and causing damage or generating pilling or feathering can be prevented. Also, the washing effect can be improved since water can pass through the space between said linear parts. It is preferable for said linear parts to be composed into a ring shape by both ends being coupled to said net. Accordingly, the linear parts do not become caught by the laundry and can prevent the laundry from being abraded and damaged or from generating pilling and feathering.

[0014]

Embodiments of the invention

Below, the first embodiment of the present invention will be explained by referring to Figures 1-4.

[0015]

Laundering auxiliary implement (1) shown in the figures is provided with sheet-shaped first water permeable member (2), sheet-shaped second water permeable member (12) of smaller area than said first water permeable member (2), and sheet-shaped third water permeable member (22) of the same area and same shape as second water permeable member (12) and of smaller area than said first water permeable member (2). Water permeable members (2), (12) and (22) are flexible.

[0016]

The periphery of said first water permeable member (2) has a rectangular shape with four sides positioned at the top, bottom, left, and right based on the arrangement shown in Figures 1 and 3, and accordingly, has first through fourth edge parts (A), (B), (C), and (D) along each side of said rectangular shape. In this embodiment, length (α) of second and third edge parts (B) and (C) positioned at the left and right is longer than length (β) of first and fourth edge parts (A) and (D) positioned at the top and bottom. The periphery of said second water permeable member (12) has a trapezoidal shape with four sides positioned at the top, bottom, left, and right. Said second water permeable member (12) and third water permeable member (22) are mutually composed as mirror images. In this embodiment, water permeable members (2), (12), and (22) are made of an expandable net.

[0017]

As shown in Figure 3, said second water permeable member (12) and third water permeable member (22) are arranged on one surface of said first water permeable member (2) so that one section of laundry (10) on one surface of said first water permeable member (2) can be covered with second water permeable member (12) and third water permeable member (22).

[0018]

One peripheral part of said second water permeable member (12) and one peripheral part of third water permeable member (22) are composed as one body with one peripheral part of said first water permeable member (2), and the spaces between first water permeable member (2) and the remaining peripheral part of said second water permeable member (12) and between first water permeable member (2) and the remaining peripheral part of said third water permeable

member (22) are respectively composed as the insertion/extraction opening for laundry (10). Namely, the periphery of said second water permeable member (12) has a trapezoidal shape as noted above by having an edge part composed as one body with first edge part (A) of first water permeable member (2) which is positioned at the bottom in Figures 1 and 3, an edge part composed as one body with second edge part (B) which is positioned at the left in Figure 1 and is adjacent to said first edge part, an edge part composed as one body with fourth edge part (D) which opposes said first edge part (A), and a fifth edge part (E) which traverses one surface of said first water permeable member (2). The space between said fifth edge part (E) and first water permeable member (2) comprises the insertion/extraction opening for laundry (10). Also, the periphery of said third water permeable member (22) has a trapezoidal shape as noted above by having an edge part composed as one body with said first edge part (A), an edge part composed as one body with third edge part (C) which is positioned at the right in Figure 1 and opposes second edge part (B), an edge part composed as one body with said fourth edge part (D), and a sixth edge part (F) which traverses one surface of said first water permeable member (2). The space between said sixth edge part (F) and first water permeable member (2) comprises an insertion/extraction opening for laundry (10). In this embodiment, border part (13) made of an expandable fabric is sewn onto the periphery of the net comprising said first water permeable member (2) in order to compose one peripheral part of said second water permeable member (12) and one peripheral part of third water permeable member (22) as one body with one peripheral part of said first water permeable member (2), and one peripheral part of each net comprising second water permeable member (12) and third water permeable member (22) is sewn onto said border part (13). Also, border parts (14) and (24) made of an expandable fabric are sewn onto the remaining peripheral part of said second water permeable member (12) and third water permeable member (22).

[0019]

So that one insertion/extraction opening and the other insertion/extraction opening superimpose partially, second water permeable member (12) and third water permeable member (22) are partially mutually superimposed. Namely, the edge part of third water permeable member (22) and the edge part of second water permeable member (12) composed as one body with first edge part (A) are arranged to mutually superimpose by just δ in Figure 1 at the section which includes first edge part (A). Fifth edge part (E) and sixth edge part (F) composing each insertion/extraction opening for laundry (10) are coupled at one end to first edge part (A), and the other end is coupled to fourth edge part (D) by both ends of said border parts (14) and (24) being sewn onto border part (13) at the periphery of first water permeable member (2). Fifth edge part

(E) is composed to be longer than edge parts (A), (B), (C), and (D) of first water permeable member (2) by nearing second edge part (B) while approaching fourth edge part (D) from first edge part (A). Sixth edge part (F) is composed to be longer than edge parts (A), (B), (C), and (D) of first water permeable member (2) by nearing third edge part (C) while approaching fourth edge part (D) from first edge part (A). In this way, the [overlap] width in the direction along first edge part (A) in the superimposed section of second water permeable member (12) and third water permeable member (22) becomes smaller towards fourth edge part (D), and moreover, becomes zero at point (P) where fifth edge part (E) and sixth edge part (F) mutually intersect. Also, the space between fifth edge part (E) and sixth edge part (F) in the direction along first edge part (A) becomes larger towards fourth edge part (D) from intersecting point (P) of fifth edge part (E) and sixth edge part (F), and reaches its maximum value (γ) at fourth edge part (D).

[0020]

Hanger (3) is attached to first water permeable member (2) by being inserted into ring (4) made of a fabric which is sewn onto said border part (13). It is possible to hang laundry (10) as shown in Figure 3 on said hanger (3). Laundry (10) hung on said hanger (3) is superimposed on water permeable member (2). Also, hanging loop (5) made of a fabric is sewn onto said water permeable member (2), and wash-line pole, etc., can be inserted when drying laundry (10).

[0021]

Due to water permeable members (2), (12) and (22) being flexible as noted above, it is possible to wind laundry (10) and water permeable members (2), (12) and (22) as one body in a superimposed state, composing them into a roll shape as shown in Figure 4. For this, it is possible to roll them up with said hanger (3) as the center shaft. It is possible to wind laundry (10) and water permeable member (2) into a double roll shape, but it is preferable that they be wound into not less than three layers.

[0022]

Net-shaped rubber band (15) having water permeability is wound on water permeable members (2), (12), and (22) and laundry (10) wound into a roll shape, and this prevents water permeable members (2), (12), and (22) and laundry (10) wound into a roll shape from spreading out. This rubber band (15) can be coupled to water permeable member (2) as shown in

Figures 1-3, can be attached to laundering auxiliary implement (1) at the first edge part (A) side, or can be separate from laundering auxiliary implement (1). The means for preventing water permeable member (2) and laundry (10) wound into a roll shape from spreading out is not restricted in particular, and it is possible to use a button, hook, cord, magic tape, rubber, pin, zipper, clothespin, etc. For example, it is possible to provide the female part (16a) of a magic tape on one side of the front and back of band main body (16) and provide male part (16b) of the magic tape to the other side as shown in Figure 6(a), to attach to one end of band main body (17) coupling part (17a) which has plural openings capable of being inserted into the other end as shown in Figure 6(2), or to attach female coupling part (18a) to one end of band main body (18) and attach male coupling part (18b) capable of being attached and detached to and from said female coupling part (18a) to the other end. In all of the aforementioned cases, it is preferable from the point of view of preventing decrease in the washing ability to provide water permeability by composing [said control means] with a net shape.

[0023]

When washing laundry (10) using said laundering auxiliary implement (1), first of all, laundry (10) is hung on hanger (3). Next, laundry (10) is inserted between first water permeable member (2) and second and third water permeable members (12) and (22) via the insertion/extraction opening between first water permeable member (2) and fifth and sixth edge parts (E) and (F), and laundry (10) on one surface of said first water permeable member (2) is covered with second and third water permeable members (12) and (22). In this way, insertion of laundry (10) with respect to water permeable members (2), (12), and (22) is executed. Said inserted laundry (10) and water permeable members (2), (12), and (22) are wound into a roll shape as one body, and the spreading out of laundry (10) and water permeable members (2), (12), and (22) wound into a roll shape is prevented by rubber band (15). Laundry (10) is placed in washing machine (20) along with water permeable members (2), (12), and (22), in said prevented state, and washing is executed.

[0024]

According to the aforementioned constitution, second water permeable member (12) and third water permeable member (22) are partially mutually superimposed so that one insertion/extraction opening and another insertion/extraction opening for inserting laundry (10) between first water permeable member (2) and second and third water permeable members (12) and (22) superimpose partially; thus, laundry (10) can be prevented from slipping out from

laundering auxiliary implement (1) during the wash more than when said superimposed state does not exist. By preventing laundry (10) from slipping out by first water permeable member (2) and second water permeable member (12) at the second edge (B), by first water permeable member (2) and third water permeable member (22) at the third edge (C), and by first water permeable member (2), second water permeable member (12), and third water permeable member (22) at the center of first edge (A), said slip out prevention can be executed effectively. Fifth edge part (E) and sixth edge part (F) comprising the insertion/extraction opening are composed to be longer than edge parts (A), (B), (C), and (D) of first water permeable member (2), so the insertion/extraction opening for laundry (10) becomes large and insertion of laundry (10) becomes easy. The width in the direction along first edge (A) in the section where second water permeable member (12) and third water permeable member (22) superimpose is composed to get smaller towards fourth edge part (D), and moreover, to become zero at point (P) where fifth edge part (E) and sixth edge part (F) mutually intersect, and the space between fifth edge part (E) and sixth edge part (F) in the direction along first edge part (A) becomes larger towards fourth edge part (D) from intersecting point (P) of fifth edge part (E) and sixth edge part (F). In this way, it is possible to prevent laundry (10) from slipping out from the first edge part (A) side while on the other hand it is possible to insert laundry (10) from fourth edge (D) side easily. Also, by hanging laundry (10) on hanger (3), slipping out of laundry (10) can be reliably prevented.

[0025]

Figure 7 shows the second embodiment of the present invention. The same parts as in the aforementioned first embodiment are indicated with the same codes. The difference from the aforementioned first embodiment is that fifth edge part (E) and sixth edge part (F) are curved at the first edge (A) side and the edge part of third water permeable member (22) and the edge part of second water permeable member (12) which are composed into one body with first edge part (A) mutually superimpose along the entire length of first edge (A). In this way, the area where second water permeable member (12) and third water permeable member (22) mutually superimpose is enlarged so slipping out of laundry (10) can be prevented reliably. The rest is the same as the first embodiment.

[0026]

Figure 8 shows the third embodiment of the present invention. The same parts as in the aforementioned first embodiment are indicated with the same codes. The difference from the

aforementioned first embodiment is that sheet-shaped fourth water permeable member (82) of smaller area than first water permeable member (2) is provided. This fourth water permeable member (82) is composed of a net similar to the other water permeable members (2), (12), and (22), and is arranged on one surface of first water permeable member (2). The periphery of fourth water permeable member (82) has a rectangular shape with edge parts composed as one body with second edge part (B), third edge part (C), and fourth edge part (D), and with seventh edge part (G) which traverses one surface of first water permeable member (2). One peripheral part of the net composing fourth water permeable member (82) is sewn onto border part (13) in order to make one peripheral part of fourth water permeable member (82) to be one body with one peripheral part of first water permeable member (2), and border part (84) is sewn onto the seventh edge part (G). One end of seventh edge part (G) is coupled to second edge part (B), the other end is coupled to third edge part (C), the other end of fifth edge part (E) is coupled near the coupling position of second edge part (B) with one end of seventh edge part (G), and the other end of sixth edge part (F) is coupled near the coupling position of third edge part (C) with the other end of seventh edge part (G). In this third embodiment, the top surface of laundry (10) is covered with fourth water permeable member (82). The rest is the same as the first embodiment.

[0027]

Figure 9 shows the fourth embodiment of the present invention. The same parts as in the aforementioned third embodiment are indicated with the same codes. The difference from the aforementioned third embodiment is that the other end of fifth edge part (E) is coupled between one end of fourth edge part (D) and one end of seventh edge part (G) and the other end of sixth edge part (F) is coupled between the other end of fourth edge part (D) and the other end of seventh edge part (G). The rest is the same as the third embodiment.

[0028]

It is possible to compose water permeable members (2), (12), and (22) in the aforementioned embodiments with sheet-shaped member (2') of the first modified example regarding which the main part is shown in (1) and (2) of Figure 10 and Figure 11 instead of with the net. This sheet-shaped member (2') has flexible front surface net (31), flexible back surface net (32) which is arranged to be spaced away from said front surface net (31), and plural linear parts (33) capable of bending and deforming elastically. By one end of respective linear parts (33) being coupled to front surface net (31) and the other end being coupled to back surface net (32), both nets (31) and (32) are made capable of elastic relative displacement. Namely, space

(D') of nets (31) and (32) when not elastically relatively deformed [sic], as shown in Figure 11(1), is interposed as indicated in Figure 11(2) by each linear part (33) bending elastically. Space (35) is formed between linear parts (33). The network shape of nets (31) and (32) is hexagonal in this embodiment, but it is not restricted to this. All that is necessary is for nets (31) and (32) to be flexible, but sufficient softness so as to not damage the laundry is preferable, and in this modified example, it is achieved by knitting in yarns with twisted synthetic resin filaments. All that is necessary for linear parts (33) is to be elastically bendable and deformable, but in this embodiment they are composed by alternately coupling a synthetic resin filament, of greater rigidity and thickness than the synthetic resin filament used to make nets (31) and (32), to net (31) on the front side and net (32) on the back side.

[0029]

Figure 12(1) shows an auxiliary implement for laundering in the fifth embodiment of the present invention. The difference in this fifth embodiment from the aforementioned embodiments is that water permeable members (2), (12), and (22) are composed of sheet-shaped member (2') described in the aforementioned modified example, laundry (10) and water permeable member (2') are folded as one body so that two folds (50) are created instead of winding into a roll shape, and folded laundry (10) and water permeable members (2), (12), and (22) are prevented from spreading out with a control means (omitted from the figure) such as a rubber band, etc. similar to the aforementioned embodiments. Also, the trough side of two folds (50) is positioned on one surface of first water permeable member (2) and the other trough side is positioned on the other surface of first water permeable member (2). The rest can be constituted in the same manner as the aforementioned embodiments.

[0030]

Figure 12 (2) shows the sixth embodiment of the present invention. The difference from the fifth embodiment is in the fact that the trough sides of two mutually parallel folds (50) are both positioned on one surface or the other surface of first water permeable member (2). The rest is the same as the fifth embodiment.

[0031]

Figure 13(1) shows the seventh embodiment of the present invention. The difference from the fifth embodiment is that the number of mutually parallel folds (50) is three, one trough

side of two adjacent folds (50) is positioned on one surface of first water permeable member (2), and the other trough side is positioned on the other surface of first water permeable member (2). The rest is the same as the fifth embodiment.

[0032]

Figure 13(2) shows the eighth embodiment of the present invention. The difference from the seventh embodiment is in the fact that the trough sides of two adjacent folds (50) are positioned on one surface or the other surface of first water permeable member (2). The rest is the same as the seventh embodiment.

[0033]

Figure 14(1) shows the ninth embodiment of the present invention. The difference from the fifth embodiment is that the number of mutually parallel folds (50) is four, one trough side of two adjacent folds (50) is positioned on one surface of first water permeable member (2), and the other trough side is positioned on the other surface of first water permeable member (2). The rest is the same as the fifth embodiment.

[0034]

Figure 14(2) shows the tenth embodiment of the present invention. The difference from the fifth embodiment is that the number of folds (50) is three, two folds (50) of these are on the same linear line, one trough side is positioned on one surface of first water permeable member (2), the other trough side is positioned on the other surface of first water permeable member (2), and the remaining fold (50) is orthogonal with respect to said two folds (50). The rest is the same as the fifth embodiment.

[0035]

Sheet-shaped member (2') composing the water permeable members in the aforementioned modified examples is composed by coupling front surface net (31) flexible to back surface net (32) which is arranged to be spaced from said front surface net (31) and to be elastically relatively displaceable. Therefore, when composing the auxiliary implement for laundering in the first through fourth embodiments, the relative movement of back surface net (32) with respect to laundry (10) can be alleviated even if centrifugal force during dewatering or

water impact acts on the water permeable member which covers the periphery of rolled laundry (10) by front surface net (31) elastically displacing relative to the back surface net (32). Also, in the fifth through tenth embodiments, the relative movement of back surface net (32) with respect to laundry (10) can be alleviated even if centrifugal force during dewatering or water impact on the water permeable member which covers the periphery of folded laundry (10) by front surface net (31) elastically displacing relative to back surface net (32). In this way, the periphery of rolled laundry (10) in the first through fourth embodiments and the periphery of folded laundry (10) in the fifth through tenth embodiments being damaged by abrasion by net (31) and generating pilling and feathering can be prevented.

[0036]

Also, by the coupling means between front surface net (31) and back surface net (32) being composed of plural linear parts (33) which are elastically bendable and deformable, and one end of each linear part (33) being coupled to front surface net (31) and the other end being coupled to back surface net (32), nets (31) and (32) are made elastically relatively displaceable and space (35) is formed between linear parts (33). In this way, water can flow through space (35) between front surface net (31) and back surface net (32) so the washing effect can be improved.

[0037]

It is also possible to fold laundry (10) and water permeable members (2), (12), and (22) as one body so that at least one fold is created by using an auxiliary implement for laundering similar to the aforementioned embodiments, wind it into a roll shape thereafter, and regulate spreading out of water permeable members and laundry (10) which were wound into a roll shape with a control means (omitted from the figures) such as a rubber band, etc., similar to the first embodiment. In this way, the same effect as the aforementioned embodiments can be achieved.

[0038]

It is possible to compose water permeable members (2), (12), and (22) in the aforementioned embodiments with sheet-shaped member (102) of the second modified example regarding which the main part is shown in Figures 15 and 16 instead of the net or sheet-shaped member (2') used in the first modified example. This sheet-shaped member (102) is comprised of flexible net (131) and plural linear parts (133) capable of bending and deforming elastically and

coupled to one surface of said net (131). Linear parts (133) are composed into a ring shape by both ends being coupled to net (131). In this case, laundry (10) and sheet-shaped member (102) are superimposed so that the linear parts (133) side contacts laundry (10). The network shape of said net (131) is a diamond shape in this modified example, but it is not restricted in particular. All that is necessary is for this net (131) to have flexibility, while sufficient softness to not damage the laundry is desirable, and in this modified example, it is composed by knitting in yarns with twisted plural synthetic resin filaments. All that is necessary for each linear part (133) is for it to bend and deform elastically, but in this modified example it is composed by coupling both ends of a synthetic resin filament, of greater rigidity and thickness than the synthetic resin filament composing net (131), to net (131).

[0039]

In the aforementioned embodiments, the dimension of second water permeable member (12) and third water permeable member (22) in the direction along second edge part (B) can be composed to be shorter than the dimension of first water permeable member (2). In this way, tensile force functions on second water permeable member (12) and third water permeable member (22) by winding laundry (10) and water permeable members (2), (12), and (22) into a roll shape as one body, or folding them into one body, or winding them into a roll shape and folding it as one body since water permeable members (2), (12), and (22) are expandable. The laundry can be held between first water permeable member (2) and fifth and sixth edge parts (E) and (F) by said tensile force so slipping out of laundry can be reliably prevented.

[0040]

The present invention is not restricted to the aforementioned embodiments and modified examples, and hanger (3) can be arranged on the first edge (A) side.

[0041]

Application examples

Washing was executed using the auxiliary implement for laundering of the present invention and the auxiliary implement for laundering in the comparative examples, and slipping out of the laundry was compared. Each auxiliary implement for laundering backed with laundry was folded similarly to Figure 13(2), and spreading out was prevented with a rubber band of

width 2 cm and length 30 cm. As the laundry, a commercial women's thin 100% wool sweater (size M) was used. Washing was executed under the following conditions using a fully automated washing machine (made by Matsushita Electric Industrial Co., Ltd, NA-F60K1) and double tub type washing machine (Toshiba Corporation, VH-300S2).

[0042]

(Washing condition)

Detergent concentration: 0.133 wt%

Detergent used: Commercial light liquid detergent

Water used: Service water

Washing cycle: The fully automated washing machine used the hand washing [delicate] cycle (medium water level), the double tub type washing machine provided weak water flow, and washing time was 10 minutes.

[0043]

Application Example 1

Washing was executed using an auxiliary implement for laundering which, without the rubber band, had the form of the auxiliary implement for laundering shown in Figure 1, and which used water permeable members made from the sheet-shaped member shown in Figure 10 and Figure 11. As the dimensions of the auxiliary implement for laundering, α in Figure 1 was 67 cm, β was 50 cm, γ was 18 cm, and δ was 12 cm.

[0044]

Application Example 2

Washing was executed using an auxiliary implement for laundering which, with the rubber band removed, had the form of the auxiliary implement for laundering shown in Figure 1, and which composed the first water permeable member with the sheet-shaped member shown in Figure 10 and Figure 11 and the second and third water permeable members with a net. As the dimensions of the auxiliary implement for laundering, α in Figure 1 was 67 cm, β was 50 cm, γ was 22 cm, and δ was 12 cm.

[0045]

Application Example 3

Washing was executed using an auxiliary implement for laundering which, with the rubber band removed, had the form of the auxiliary implement for laundering shown in Figure 1, and which composed the first water permeable member with the sheet-shaped member shown in Figure 10 and Figure 11 and the second and third water permeable members with a net. As the dimensions of the auxiliary implement for laundering, α in Figure 1 was 67 cm, β was 50 cm, γ was 18 cm, and δ was 6 cm.

[0046]

Application Example 4

Washing was executed using an auxiliary implement for laundering which, with the rubber band removed, had the form of the auxiliary implement for laundering shown in Figure 7, and which composed the first water permeable member with the sheet-shaped member shown in Figure 10 and Figure 11 and the second and third water permeable members with a net. As the dimensions of the auxiliary implement for laundering, α in Figure 1 was 67 cm, β was 50 cm, ε in Figure 7 was 18 cm, and κ was 18 cm.

[0047]

Application Example 5

Washing was executed using an auxiliary implement for laundering which, with the rubber band removed, had the form of the auxiliary implement for laundering shown in Figure 8, and which composed the water permeable members with the sheet-shaped member shown in Figure 10 and Figure 11. As the dimensions of the auxiliary implement for laundering, α in Figure 1 was 67 cm, β was 50 cm, γ was 12 cm, and η in Figure 8 was 10 cm.

[0048]

Application Example 6

Washing was executed using an auxiliary implement for laundering which, with the rubber band removed, had the form of the auxiliary implement for laundering shown in Figure 1, and which composed the water permeable members with the sheet-shaped member shown in Figure 10 and Figure 11. As the dimensions of the auxiliary implement for laundering, α in Figure 1 was 67 cm, β was 50 cm, γ was 18 cm, and δ was 6 cm. Furthermore, the dimension of the second water permeable member and the third water permeable member in the direction along the second edge part was composed to be shorter by 2 cm than the dimension of the first water permeable member.

[0049]

Application Example 7

Washing was executed using an auxiliary implement for laundering which has a form removed of the rubber band from the auxiliary implement for laundering shown in Figure 9, and which composed the water permeable members with the sheet-shaped member shown in Figure 10 and Figure 11. As the dimensions of the auxiliary implement for laundering, α in Figure 1 was 67 cm, β was 50 cm, γ was 12 cm, η in Figure 8 was 10 cm, and θ was 5 cm.

[0050]

Comparative Example 1

Laundering auxiliary implement (201) in the first comparative example shown in Figure 17 was used. The difference between this laundering auxiliary implement (201) and laundering auxiliary implement (1) of the first embodiment is the fact that fifth water permeable member (202), of smaller area than first water permeable member (2) and with a rectangular shaped periphery is used instead of second water permeable member (12) and third water permeable member (22). This fifth water permeable member (202) is arranged on one surface of first water permeable member (2). The periphery of this fifth water permeable member (202) has a rectangular shape, with edges composed as one body with first edge part (A), second edge part (B), and third edge part (C), and with an eighth edge part (H) which traverses one surface of first

water permeable member (2). Border part (203) made of a fabric is sewn along said eighth edge part (H). The bottom part of laundry (10) on one surface of first water permeable member (2) is covered with fifth water permeable member (202). First water permeable member was composed with the sheet-shaped member shown in Figure 10 and Figure 11 and fifth water permeable member (202) was composed with a net. The rest was made similar to the form, with the rubber band removed of the auxiliary implement for laundering in the first embodiment, and the same parts are indicated with the same codes. As the dimensions of the auxiliary implement for laundering, α in Figure 1 was 67 cm, β was 50 cm, λ in Figure 17 was 33.5 cm.

[0051]

Comparative Example 2

Laundering auxiliary implement (301) of the second comparison example shown in Figure 18 was used. The difference between this laundering auxiliary implement (301) and laundering auxiliary implement (1) in the first embodiment is that sixth and seventh band-shaped water permeable members (302) and (303), of smaller area than first water permeable member (2) and with a rectangular shaped periphery, are used instead of second water permeable member (12) and third water permeable member (22), and said sixth and seventh water permeable members (302) and (303) are of mutually identical shape and are arranged, as shown in the figure, by being separated to the left and right so as not to mutually superimpose on one surface of first water permeable member (2). The periphery of sixth water permeable member (302) has a rectangular shape, with edges composed as one body with first edge part (A), second edge part (B), and fourth edge part (D), and with a ninth edge part (I) which traverses one surface of first water permeable member (2). The periphery of said seventh water permeable member (303) has a rectangular shape, with edges composed as one body with first edge part (A), third edge part (C), and fourth edge part (D), and with a tenth edge part (J) which traverses one surface of first water permeable member (2). Border parts (304) and (305) made of fabric are sewn along said ninth edge part (I) and tenth edge part (J). The left and right parts of laundry (10) on one surface of first water permeable member (2) are covered with sixth and seventh water permeable members (302) and (303). The water permeable members are composed from the sheet-shaped member shown in Figure 10 and Figure 11. The rest is the same as the form, with the rubber band removed, of the auxiliary implement for laundering in the first embodiment, and the same parts are indicated with the same reference numbers. As the dimensions of the auxiliary implement for laundering, α in Figure 1 was 67 cm, β was 50 cm, τ in Figure 18 was 18 cm, and ϕ was 14 cm.

[0052]

Comparative Example 3

Laundering auxiliary implement (401) of the third comparative example shown in Figure 19 was used. The difference between this laundering auxiliary implement (401) and laundering auxiliary implement (1) in the first embodiment is that band-shaped eighth and ninth water permeable members (402) and (403), of smaller area than first water permeable member (2) and with a rectangular shaped periphery are used instead of second water permeable member (12) and third water permeable member (22), and said eighth and ninth water permeable members (402) and (403) are of mutually identical shape and are arranged, as shown in the figure, by being separated to the top and bottom so as not to mutually superimpose on one surface of first water permeable member (2). The periphery of eighth water permeable member (402) has a rectangular shape, with edges composed as one body with second edge part (B), third edge part (C), and fourth edge part (D), and with an eleventh edge part (K) which traverses one surface of first water permeable member (2). The periphery of ninth water permeable member (403) has a rectangular shape, with edges composed as one body with first edge part (A), second edge part (B), and third edge part (C), and with a twelfth edge part (L) which traverses one surface of first water permeable member (2). Border parts (404) and (405) made of fabric are sewn along said eleventh edge part (K) and twelfth edge part (L). The top and bottom parts of laundry (10) on one surface of first water permeable member (2) are covered by eighth and ninth water permeable members (402) and (403). The first water permeable member was composed with the sheet-shaped member shown in Figure 10 and Figure 11, and eighth and ninth water permeable members (402) and (403) were composed with a net. The rest is the same as the form, with the rubber band removed, of the auxiliary implement for laundering in the first embodiment, and the same parts are indicated with the same codes. As the dimensions of the auxiliary implement for laundering, α in Figure 1 was 67 cm, β was 50 cm, Ψ in Figure 19 was 8 cm, and ω was 31 cm.

[0053]

From the test results above, it was possible to verify that the laundry does not slip out from the auxiliary implement for laundering during washing in Application Examples 1-7. By contrast, the laundry slipped out from the auxiliary implement for laundering during washing in Comparative Examples 1-3. It was verified that the laundry did not slip out when the auxiliary implement for laundering in Application Example 6 was used even in the standard wash cycle,

which uses greater washing force than the hand washing cycle of a fully automated washing machine.

[0054]

Effect of the invention

According to the present invention, an inexpensive auxiliary implement for laundering can be provided in which insertion of the laundry is easy, the laundry becoming misshapen can be prevented, sufficient washing effect can be maintained, and shrinking, damaging, pilling, and feathering of the laundry can be prevented.

Brief description of the figures

Figure 1 is a front view of the auxiliary implement for laundering in the first embodiment of the present invention.

Figure 2 is a back view of the auxiliary implement for laundering in the first embodiment of the present invention.

Figure 3 is a front view of the state of laundry having been stored in the auxiliary implement for laundering of the first embodiment in the present invention.

Figure 4 is a perspective view of the auxiliary implement for laundering and the laundry having been wound into a roll shape in the first embodiment of the present invention.

Figure 5 is a perspective view in the middle of winding up the laundry and the auxiliary implement for laundering in the modified example of the present invention.

In Figure 6, (1)-(3) are figures showing the [control] members for preventing the laundry and water permeable members from spreading out in the modified example of the present invention.

Figure 7 is a front view of the laundry and the auxiliary implement for laundering in the second embodiment of the present invention.

Figure 8 is a front view of the laundry and the auxiliary implement for laundering in the third embodiment of the present invention.

Figure 9 is a front view of the laundry and the auxiliary implement for laundering in the fourth embodiment of the present invention.

Figure 10 is a partial perspective view of the water permeable member in the first modified example of the present invention.

In Figure 11, (1) is a partial cross section showing the state before relative displacement and (2) is a partial cross section showing the state after relative displacement of the front surface net and the back surface net in the first modified example of the present invention.

In Figure 12, (1) is a perspective view of the folded laundry and the auxiliary implement for laundering in the fifth embodiment of the present invention, and (2) is a perspective view of the folded laundry and the auxiliary implement for laundering in the sixth embodiment of the present invention.

In Figure 13, (1) is a perspective view of the folded laundry and the auxiliary implement for laundering in the seventh embodiment of the present invention, and (2) is a perspective view of the folded laundry and the auxiliary implement for laundering in the eighth embodiment of the present invention.

In Figure 14, (1) is a perspective view of the folded laundry and the auxiliary implement for laundering in the ninth embodiment of the present invention, and (2) is a perspective view of the folded laundry and the auxiliary implement for laundering in the tenth embodiment of the present invention.

Figure 15 is a partial perspective view of the water permeable member in the second modified example of the present invention.

Figure 16 is a partial cross section of the water permeable member in the second modified example of the present invention.

Figure 17 is a front view of the auxiliary implement for laundering in the first comparative example.

Figure 18 is a front view of the auxiliary implement for laundering in the second comparative example.

Figure 19 is a front view of the auxiliary implement for laundering in the third comparative example.

Explanation of the symbols

(2)...first water permeable member, (3)...hanger, (10)...laundry, (12)...second water permeable member, (22)...third water permeable member, (31)...front surface net, (32)...back surface net, (33)...linear part, (50)...fold, (131)...net, (133)...linear part, (A)...first edge part, (B)...second edge part, (C)...third edge part, (D)...fourth edge part, (E)...fifth edge part, (F)...sixth edge part.

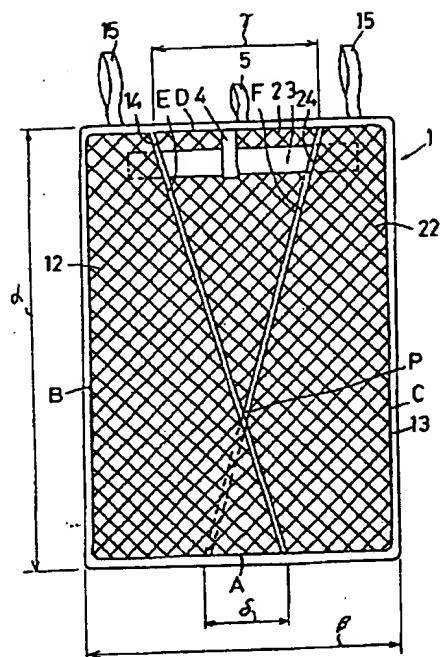


Figure 1

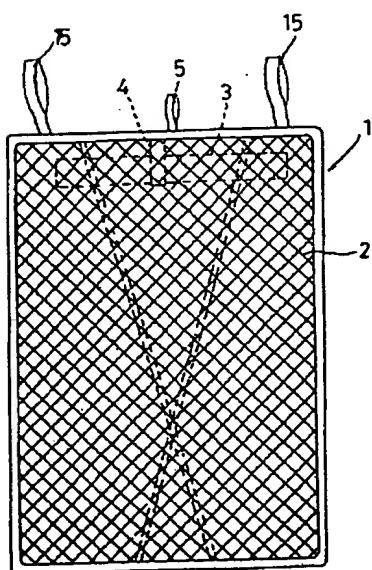


Figure 2

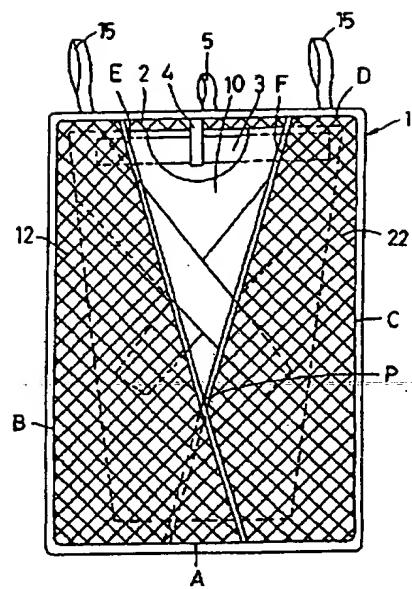


Figure 3

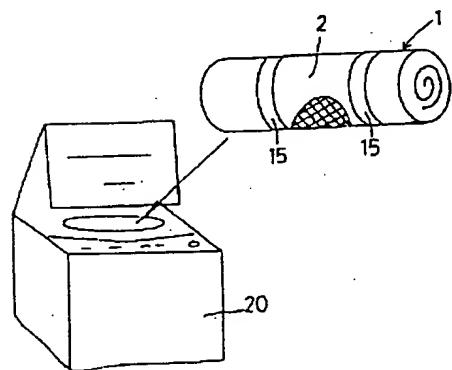


Figure 4

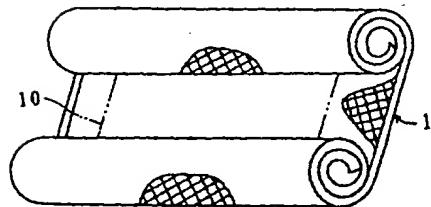


Figure 5

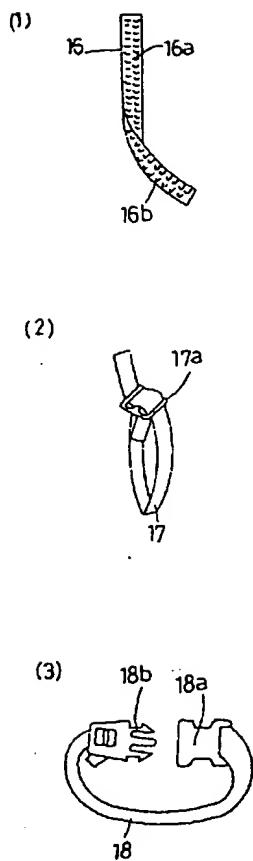


Figure 6

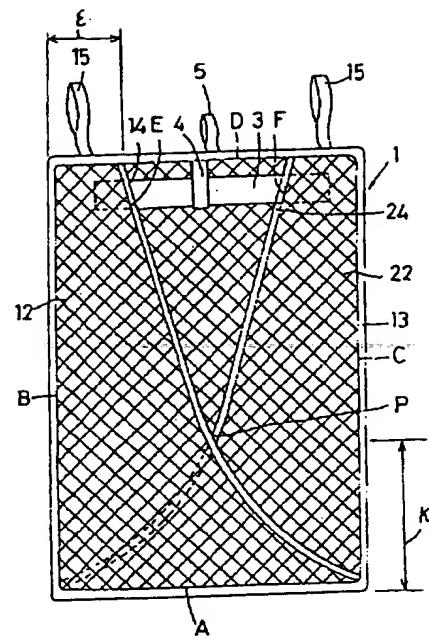


Figure 7

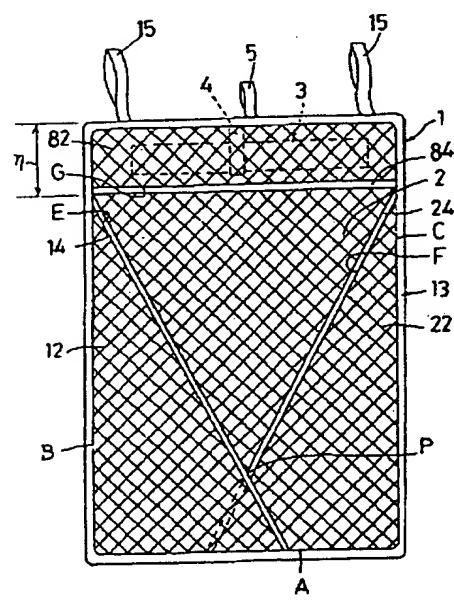


Figure 8

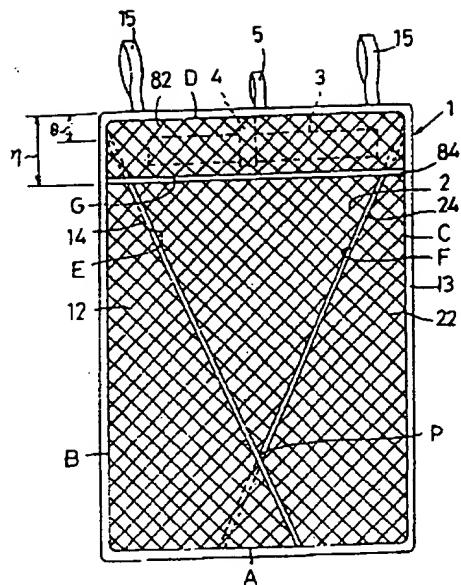


Figure 9

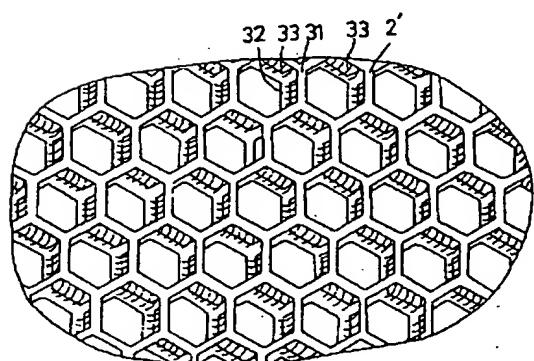


Figure 10

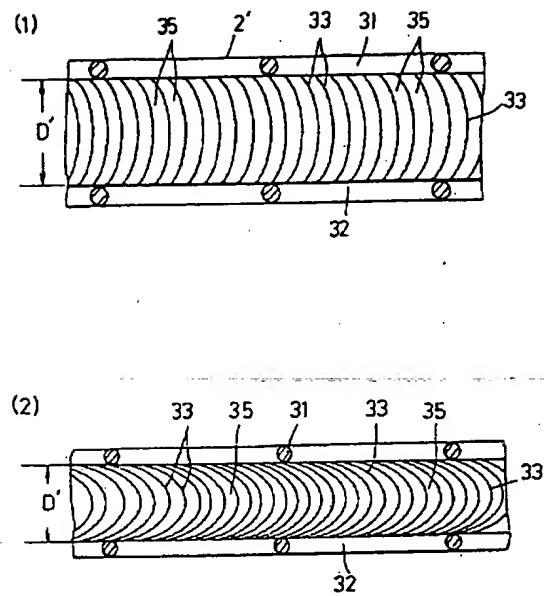


Figure 11

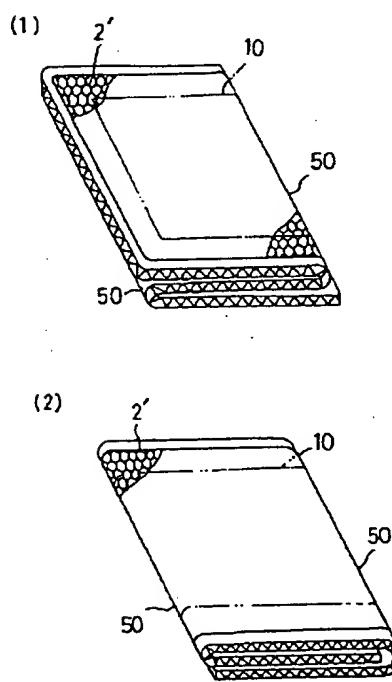


Figure 12

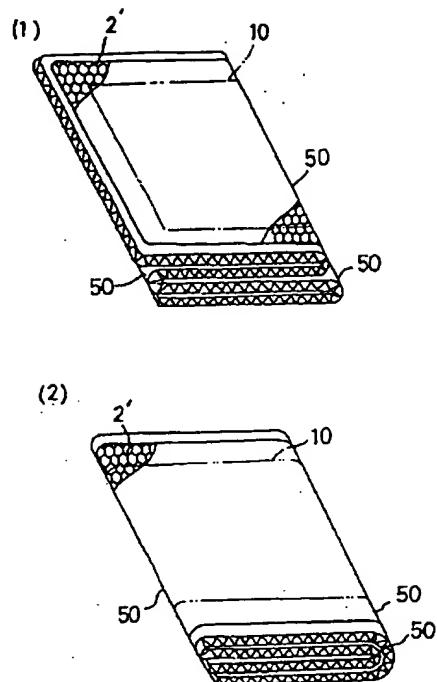


Figure 13

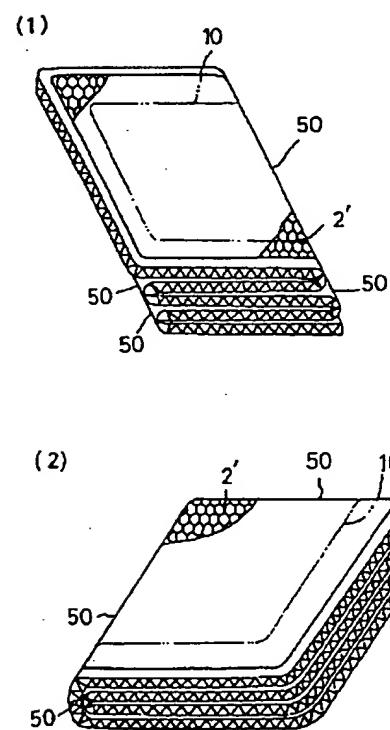


Figure 14

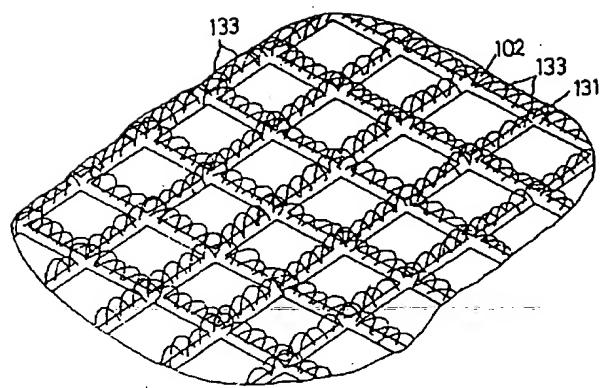


Figure 15

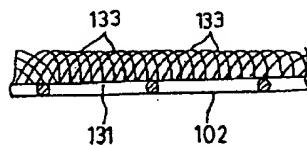


Figure 16

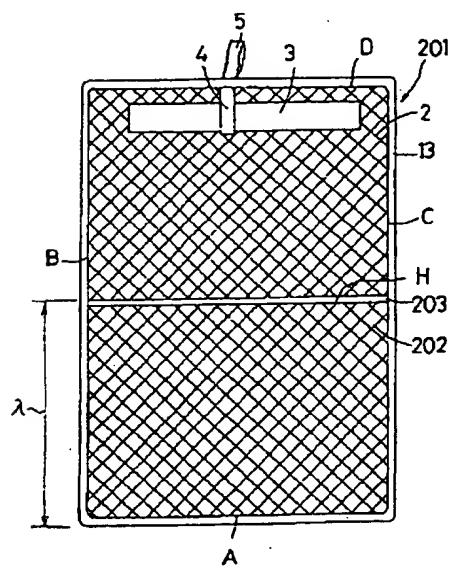


Figure 17

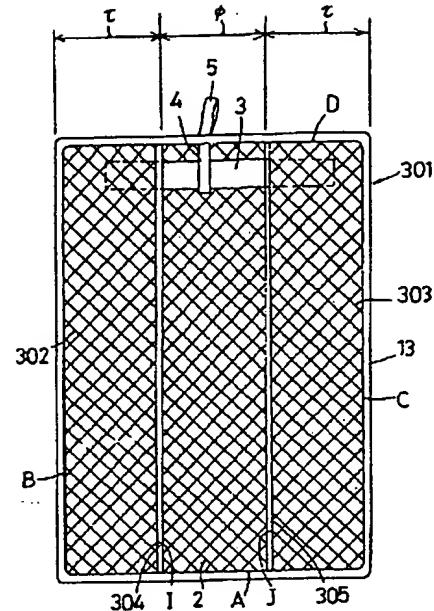


Figure 18

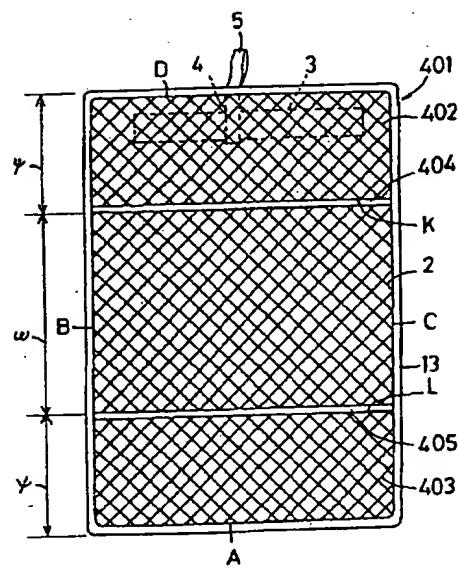


Figure 19

99-199339/17 KAO CORP 97.07.22 97JP-195990 (99.02.16) D06M 13/46, 13/00, 13/342	A60 D25 E19 Composition for liquid softening finishing agent - contains tertiary amine containing straight or branched alkyl or alkenyl group and ester bond, acid amide bond, or ether bond, and at least one dye C99-058522	KAOS 97.07.22 *JP 11043865-A A(12-S5S) E(10-B2B, 10-B3B, 10-B4B, 25) or yellow in Colour Index Name.
		<p><u>USE</u></p> <p>The compsn. for a liq. softening finishing agent is used in a synthetic fibre, including acryl, polyester, polyamide.</p> <p><u>ADVANTAGE</u></p> <p>The compsn. has no dyeing property with respect to the synthetic fibre and high shelf stability. Softening finishing is simply, sufficiently applied in washing synthetic fibre clothing in a fully automatic washing machine.</p> <p>(KR) (9pp215DwgNo.0/0)</p>

JP 11043865-A